

April 3, 2006

Elaine Hebert  
California Energy Commission  
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Dear Elaine:

The key question on coatings is, what is considered acceptable performance for a coating? If in general it is three years, then the proposed changes to the 2005 Title 24 standard are satisfactory. However, with the problems California suffered in the 90's with coatings having to be recoated often, three years is probably not sufficient to give the performance the customer is expecting with a Cool Roof. Because of the experience from the 90's, there was a study done to understand coatings with the results from this work used to develop the present Title 24 standard to better control the quality of coatings. Some of the proposed 45-day language seems to run counter to those efforts. The following points will address some of the items considered issues in the 45-day language:

Single Ply membranes are engineered for exposed applications taking into consideration weathering, wind forces, abrasion, freeze - thaw cycling, etc. With this knowledge, single plies have developed national standards for the different membranes, D 4637 for EPDM, D 6878 for TPO, and D 4434 for PVC. These membranes normally require a minimum of 45-mils (0.045 inches) and will typically have a 10-year warranty issued. For longer warranties, the industry requires greater thickness starting at 60-mils and increasing in thickness depending on the length of the warranty. In Carlisle's case, coatings have been used with its roofing systems for over 30 years with everything from Hypalon to Acrylic used in this application. Carlisle only warrants its coating for 5-years but requires a minimum thickness of 20-mils for that warranty to be issued. The thinner gauge for this coating as compared to the membrane is related to the shorter performance of the coating and the fact that the coating in the single ply case is using the substrate for some of its structural characteristics. But with no national standards for the various coating types and the coating manufactures allowed to pick whatever coating thickness they want to use, the thickness control, a key factor in longevity, is lost. With 20-mils giving only five years of comfortable performance, what will a thinner coating offer? Installed cost is

another driving factor and thickness has a major impact on cost that will help push many to lower gauges. Will all this put California back into the same issues they had faced in the 90'S and only hurt the Cool Roof program? It is recommended that the 20-mil minimum be maintained.

In the single ply standards, tensile and elongation are separate from cold temperature flexibility. Flexibility may or may not be associated with the tensile and elongation test methods therefore it is best to have a cold temperature flexibility test method as a specific requirement.

These are the comments on the 45-day language for coating in the Title 24 standard. Also see the comments submitted on June 3, 2005. If you need any clarification on any of the items above, please let me know.

Best regards,

Richard J. Gillenwater